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CALFEE HALTER & GRISWOLD, LLP
800 SUPERIOR AVENUE
SUITE 1400
CLEVELAND, OH 44114

EXAMINER	
NATARAJAN, MEERA	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/508,738	SIMARD ET AL.	
	Examiner	Art Unit	
	Meera Natarajan Ph.D.	1609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-38* is/are pending in the application.

4a) Of the above claim(s) *13 and 18-38* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-12 and 14-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 September 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-17 and species: whole cell, breast cancer, taxane, biological response modifier, polysaccharides, adjuvant that creates a local reservoir of drug, and adjuvant that creates a depot effect, in the reply filed on 04/13/2007 is acknowledged. The traversal is on the ground(s) that claim 3 is not anticipated by Emens et al. Emens et al. describes a cancer vaccine that is a whole-cell tumor vaccine genetically modified to secrete GM-CSF, whereas in the present application, the cancer vaccine composition comprises inactivated tumor cells. Applicant argues these cells will not replicate and will no secrete GM-CSF. This is not found persuasive because Emens et al. was applied to Claim 1 where it in fact is anticipated by the teachings of Emens et al. However, applicant has since cancelled Claim 1 and therefore new art teaching that of Claim 3 will be applied.

Claim 3 recites an anti-cancer vaccine composition comprising an antigen in association with an effective amount of at least one immunomodulator chemotherapeutic adjuvant eliciting an immune response in a patient and a pharmaceutically acceptable carrier, wherein said antigen is inactivated tumor cells. Wang et al. (Cancer Immunol. Immunother. 1986) teaches a combination treatment of CL 259,763 compound and inactivated L1210 leukemia vaccine given to mice challenged with P388 murine leukemia. Therefore, the technical feature recited in claim 3 is not special. Groups I and II will not be joined and the requirement is still deemed proper and is therefore made FINAL.

2. Claims 18-38 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 04/13/2007.

3. Claim 13 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 04/13/2007.

4. Applicant has cancelled Claim 1.

5. Claims 2-12 and 14-17 will be examined on the merits.

Specification

6. The use of the trademark Profilactis™ has been noted in this application (p. 21, Example XI and XII). It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Objections

7. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of parent claim 3. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 2 is broader in scope than

parent claim 3 since the Markush group includes materials which are not inactivated tumor cells.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. The term "in association" in claim 3 is a relative term which renders the claim indefinite. The term "in association" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear what the Applicant is defining "in association" to mean. Does it mean an anti-cancer vaccine composition *mixed* with an immunomodulator chemotherapeutic adjuvant, does it mean *administered at the same time* as the immunomodulator chemotherapeutic adjuvant, or does it mean *physically bound* to an immunomodulator chemotherapeutic adjuvant?

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12 Claims 2-8, 11, 12, 14, and 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains

subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant claims an "immunomodulator chemotherapeutic adjuvant" that can elicit an immune response in a patient.

The following quotation from section 2163 of the Manual of Patent Examination Procedure is a brief discussion of what is required in a specification to satisfy the 35 U.S.C. 112 written description requirement for a generic claim covering several distinct inventions:

> The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species by actual reduction to practice..., reduction to drawings..., or by disclosure of relevant, identifying characteristics, i.e., structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus... See Eli Lilly, 119 F.3d at 1568, 43 USPQ2d at 1406.
>
> A "representative number of species" means that the species which are adequately described are representative of the entire genus. Thus, when there is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus.

Thus, when a claim covers a genus of inventions, the specification must provide written description support for the entire scope of the genus. Support for a genus is generally found where the applicant has provided a number of examples sufficient so that one in the art would recognize from the specification the scope of what is being claimed.

The genus being claimed in the current application is "immunomodulator chemotherapeutic adjuvant". The disclosure defines an immunomodulator chemotherapeutic adjuvant as "any chemotherapeutic agents having an

immunomodulator effect and/or eliciting an immune response from a patient, possibly due to their structural effect on the cell's cytoskeleton and/or microtubules" (p.8, 6th paragraph). The applicant provides no identifying characteristics other than a functional limitation. The application does not disclose any other structural or physical properties that correlate to the functional aspect of being an "immunomodulator chemotherapeutic adjuvant". There are no chemical properties to confer the desired function disclosed in the current application to define an "immunomodulator chemotherapeutic adjuvant". Based on the lack of the identification of any characteristics other than the functional limitation, the application provides insufficient descriptive support to demonstrate possession of the claimed genus.

13. Claim 2-12 and 14-17 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an anti-cancer *composition* comprising an antigen in association with an effective amount of paclitaxel, wherein said antigen is inactivated tumor cells does not reasonably provide enablement for an anti-cancer ***vaccine*** composition comprising an antigen in association with an effective amount of ***any*** immunomodulator chemotherapeutic adjuvant eliciting an immune response in a patient. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

The claims are drawn to an anti-cancer ***vaccine*** composition comprising an antigen in association with an effective amount of at least one immunomodulator

chemotherapeutic adjuvant eliciting an immune response in a patient and a pharmaceutically acceptable carrier, wherein said antigen is inactivated tumor cells.

The factors to be considered in determining whether undue experimentation is required are summarized In re Wands 858 F.2d 731, 8 USPQ2nd 1400 (Fed. Cir, 1988). The court in Wands states: "Enablement is not precluded by the necessity for some experimentation such as routine screening. However, experimentation needed to practice the invention must not be undue experimentation. The key word is 'undue,' not 'experimentation.' " (Wands, 8 USPQ2d 1404). Clearly, enablement of a claimed invention cannot be predicated on the basis of quantity of experimentation required to make or use the invention. "Whether undue experimentation is needed is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations." (Wands, 8 USPQ2d 1404). The factors to be considered in determining whether undue experimentation is required include: (1) the quantity of experimentation necessary, (2) the amount or direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

(A) As drawn to methods directed to the prevention of cancer and vaccine compositions: The art teaches that a vaccine must be prophylactic (Stedman's Medical dictionary, 2000, lines 1-3). The specification does not provide any teachings of the prophylaxis of cancer, how to determine the individuals who will develop a particular cancer, nor how to effectively prevent said particular cancer type before occurrence.

Thus, one of skill in the art would not be able to use the composition of the invention as a vaccine without undertaking to determine how to select for individuals which will develop a particular cancer type before the said cancer occurs in the individual.

The abstract of Wheeler (Salud p'ublica de M'exico, (1997 Jul-Aug) 39 (4) 283-7) teaches that a cancer vaccine against human papillomavirus for the treatment of cervical cancer requires not only the activation of antigens and overcoming the host response, but the generation of high levels of T and B memory cells; and the persistence of antigens. The instant specification has not provided any teachings regarding the persistence of the tumor antigens in an individual who has yet to develop a specific type of cancer. Further Efferson et al (Anticancer Research, 2005, Vol. 25, pp. 715-24) teach that efficient induction of memory cells is hindered by the lack of information about the relationship between TCR stimulation and the cytokines required for Ag-specific memory CD8+ cells and proliferation and survival. It is noted that the instant specification has not provided any evidence that adequate levels of T and B memory cells would persist in an immunized individual who has not developed a cancer, and Efferson et al is clearly discussing a need in the art as of 2005, three years after the filing date of the instant specification, therefore the enablement for how to generate adequate memory T and B cells can not be provided from the general knowledge of in the art. Bachmann et al (Journal of Immunology, 2005, Vol. 175, pp. 4677-4685) teach that memory T cells are not a homogeneous population and can be divided into central memory T cells with a substantial capacity for recall proliferation and effector memory T cells with limited recall proliferation capacity. Bachmann et al teach that the protective

capacity of the different subpopulations of memory T cells vary, and the generation of the subpopulations is influenced by the nature and route of immune challenge. These references serve to demonstrate that the prior art is not mature with respect to how to elicit an effective prophylactic memory cell response that will persist in an individual not harboring a tumor cells and which would function to protect said individual from tumor cell development. Because the specification does not address the issues in the post-filing date art regarding how to elicit an effective memory cell response from the administration of the claimed compositions, and no objective evidence or working examples have been provided, one of skill in the art would be subject to undue experimentation in order to make and use the claimed composition as a vaccine.

(B) As drawn to an anti-cancer vaccine compositions comprising cancer specific antigens: Paul (Fundamental Immunology, Raven Press, 3rd edition, 1993) states that deficient antigen presentation is a mechanism by which tumor cells escape immune detection. This is corroborated by the observations set forth in the abstract of Semino et al (Journal of Biological Regulators and Homeostatic Agents, 1993, Vol. 7, pp. 99-105 and the abstract of Algarra et al (International Journal of Clinical and Laboratory Research, 1997, Vol. 27, pp. 95-102) which all teach that primary tumors in situ are often heterogeneous with respect to MHC presentation. The effect of the claimed vaccine upon such a heterogeneous tumor has not been demonstrated by the specification. More currently, the abstract of Bodey et al (Anticancer Research, 2000 Jul-Aug, Vol. 20, pp. 2665-2676) teaches that the failure of methods of treating cancer comprising the administration of tumor antigens is due to the failure of cancer vaccines

to eliminate the most dangerous cells within a tumor which are so de-differentiated that they no longer express cancer cell specific molecules.

Paul states that the induction of tolerance is a mechanism by which tumor cells escape immune detection. The art recognizes that T-cell are subject to clonal deletion within the thymus of a host and that this mechanism eliminates t-cell which are reactive with self-antigens. Lauritzsen et al (International Journal of Cancer, 1998, Vol. 78, pp. 216-222) teach that clonal deletions of thymocytes is a major event in T-cell tolerance which could lead to a tumor escape mechanism. In transgenic mice homozygous for HLA-specific CD+4 T-cells which are specific for a MOPC315 plasmacytoma, injection of a large number of tumor cells results in apoptosis of immature and mature transgenic CD+4+8 and CD+4 thymocytes. This negative selection was specific for the transgenic thymocytes that would complement the idiotype of the immunoglobulins of the MOPC315 plasmacytoma, because injection of tumor cells from a plasmacytoma which had a different idiotype of immunoglobulins failed to elicit the clonal deletion. Lauritzsen et al teach that injection of purified MOPC315 protein, versus the tumor cells, caused a profound reduction of the specific thymocytes specific to the idiotype of the plasmacytoma. Lauritzsen et al conclude that deletion of tumor specific thymocytes may represent a major escape mechanism in patients with cancers that secrete of shed antigens. In the instant case, the antigens are known self antigens. It would be reasonable to conclude that said normal antigens are presented within the thymus to developing thymocytes and T-cells with high affinity for said antigens are deleted as "self". It would be also reasonable to conclude that administration of the claimed

polypeptides or cells expressing said polypeptides would not result in an efficacious vaccine as a T-cell response would not be evoked due to the process of clonal deletion in the thymus, rendering the host devoid of T-cells which are specific to the self-protein. Sarma et al (Journal of Experimental Medicine, 1999, Vol. 189, pp. 811-820) states that a critical issue in therapeutic regiments comprising the administration of tumor antigens for immunotherapy is whether unmutated tumor antigens which are expressed in normal cells impose special restrictions on the CTL response in vivo. Using transgenic mice wherein the antigen specific T cells specific for the P1A non-mutated tumor antigen are expressed at high levels and remain responsive to the P1A antigen when assayed in vitro, it was found that P1A antigen expressed in the thymus resulted in clonal deletion of said specific T-cells Sarma et al note that although said transgenic mice produce an overwhelming majority of T cells that are specific for P1A, said mice are no more resistant to cells expressing P1A than non-transgenic litter mates. Sarma et al concludes that even thought P1A can be a tumor rejection antigen, the effector function of P1A specific CTL is restrained in vivo and that these results have important implications for the strategy of tumor immunotherapy. Further, the presence of CTL which can lyse target cells in vitro has no apparent nexus with anti-tumor cytolytic activity in vivo. Ohlen et al (Journal of Immunology, 2001, Vol.166, pp. 2863-2870) teach that T-cells recognizing normal proteins expressed in tumors can be isolated in vitro, but that the existence of said T-cells does not preclude in vivo energy induction and deletion (page 2863, second column, lines 1-6 of the last paragraph). Antonia et al (International Immunology, 1995, Vol. 7, pp. 715-725) teach that T-cells which are

impaired in the ability to proliferate in response to antigen and unable to reject tumors in vivo were fully functional as CTL lymphocytes in vivo. Yu and Restifo (Journal of Clinical Investigation, 2002, Vol. 110, pp. 289-294, especially page 292) teach that even when increased anti-tumor T-cell precursors have been induced by vaccination, the clinical response is partial and transient and most patients eventually succumb to progressively growing tumors. These references serve to demonstrate that induction of a CTL by means of the administered antigens of the invention or the demonstration that said CTL can lyse target cells expressing a tumor associated-antigen in vitro does not constitute evidence that T-lymphocytes would be effective at lysing tumor cells in vivo.

It is noted that the types and stages of cancers encompassed by the claims would not be expected to initiate or maintain the same growth kinetics. This is of importance with regard to the teachings of Paul on tumor cell escape mechanisms which include rapid growth as a means to overwhelm a slower immune response, (Paul, Fundamental Immunology, (text), 1993, page 1163, second column, first sentence under the heading "Factors Limiting Effective Tumor Immunity" and Table 4) and deficient antigen processing by tumor cells. With regard to the antigen processing, it is unclear whether all patients having a tumor associated antigen would have peripheral T-cells which were specific from the disclosed antigen, as the art teaches that the presence of a small number of tumor cells or the presence of a large number of tumor cells gives rise to tolerance (Paul, page 1166, second column, lines 19-23 under the heading "Sneaking Through"). Based on this observation, it is reasonable to conclude that a small number of slow growing tumor cells would elicit tolerance, and a large

number of rapidly growing tumor cells would also elicit tolerance in line with the bi-phasic response reported by Paul. Thus, it appears that the interaction of the tumor cells with the host can produce tolerance by means of clonal deletion within the thymus of said host. Furthermore, the relationships between the multitude of different tumor cells exhibiting said antigen to the host would be variable as different types of organs (neuroblastoma, brain, colorectal, gastric, head-and neck, lung, prostate, breast, thyroid, bladder, kidney, leukemia, etc) and different histological types of neoplasms (carcinoma, squamous cell, mesothelial, neuroepithelial, sarcoma, leukemia, etc) all present said disclose antigen.

The instant specification fails to address any of these issues or provide any guidance to how to circumvent the lack of efficacy which would be expected in light of the teachings of the art. One of skill in the art would be subject to undue experimentation without reasonable expectation of success in order to practice the broadly claimed methods. It is concluded based on the references discussed above, that the state of the art with respect to treating patients with cancer by means of administering tumor antigen precursors or tumor antigens is unpredictable. The specification does not provide any disclosure that the administration of the claimed polypeptides of antibodies would provide a therapeutic or prophylactic immune response against tumor in situ. Thus, without a demonstration that the administration of the broadly claimed anti-cancer vaccine composition comprising tumor antigens overcomes immunosuppression of the host, the rapid growth of the target tumor cells, failure to access the tumor because of the stromal barrier and tolerance induction in the

host and objective evidence that the target tumor cells in vivo present adequate tumor rejection antigen on the surface of all the tumor cells, one of skill in the art would be subject to undue experimentation without reasonable expectation of success in order to use the claimed method of treatment.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 2-12 and 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Hiserodt et al. (Patent #6277368). The claims are drawn to an anti-cancer vaccine composition comprising an antigen in association with an effective amount of at least one immunomodulator chemotherapeutic adjuvant eliciting an immune response in a patient and a pharmaceutically acceptable carrier, wherein said antigen is inactivated tumor cells. Hiserodt et al. teaches cellular vaccines and methods of using them in cancer immunotherapy, particularly humans. "The vaccines comprise a source of tumor-associated antigen, and a cytokine-secreting cell line (claim 11, 12, 14, 15). Vaccines may be tailored for each type of cancer (claim 7 and 8) or for each subject by mixing tumor antigen with a favorable number of cytokine-producing cells, or with a cocktail of such cells producing a plurality of cytokines at a favorable ration." (See

Abstract of Patent #6277368). The whole-cell tumor vaccines taught in Hiserodt et al. have been inactivated by methods known in the art, such as with toxins or irradiation (Column 12, 3rd paragraph) (claim 2-6). Example 7 of Hiserodt et al. discloses a combination method for treatment using IL4-secreting 4CI 107 cells mixed with autologous tumor cells along with adjuvant chemotherapy with Cisplatin. This example specifically teaches the limitation of claim 10, however Hiserodt et al. discloses "the pharmaceutical compositions of this invention may be given following, preceding, in lieu of, or in combination with, other therapies relating to generating an immune response or treating cancer in the subject" (Column 24, 4th paragraph). Examples of such chemotherapeutic agents include, cisplatin/cyclophaphamide, doxorubicin, or taxol (claims 9-10). Therefore, the reference teaches each and every limitation of the claims.

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. Claims 2, 3, 5, 6, 11, 12, 14, 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Wang et al. (Cancer Immunol. Immunother. 1986). The claims are drawn to an anti-cancer vaccine composition comprising an antigen in association with an effective amount of at least one immunomodulator chemotherapeutic adjuvant eliciting an immune response in a patient and a pharmaceutically acceptable carrier, wherein said antigen is inactivated tumor cells. Wang et al. teaches a combination treatment of

an anticancer agent, CL 259,763 compound, and an inactivated L1210 leukemia vaccine given to mice challenged with P388 murine leukemia (claims 2 and 3). The mice were vaccinated by IP injection of L1210 leukemia cells that had been irradiated with 4,400 R (Materials and Methods, p. 10) (claim 5 and 6). Wang et al. also discloses "the present study shows that CL 259,763 has a number of properties characteristic of a biological response modifier" (p.13, Discussion) and therefore teach the limitations of claims 11 and 12. Wang et al. in addition evaluated the effect of CL 259,763 on IL-2 production in tumor-bearing animals and showed that CL259,763 reversed the impairment of IL-2 production in the tumor-bearing mice. These studies meet the limitations of claim 14 and 15, by showing the presence of IL-2. Therefore, the reference teaches the limitations of the claims.

Conclusion

18. Claims 2-12 and 14-17 are rejected.

19. No claim is allowed.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meera Natarajan whose telephone number is 571-270-3058. The examiner can normally be reached on Monday-Thursday, 8:30AM-6:00PM, ALT. Friday. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mary Mosher can be reached on 571-272-0906. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (I N USA OR CANADA) or 571-272-1000.

MN

MARY MOSHER
SUPERVISORY PATENT EXAMINER
6-21-07